

Obesity and Hypertension

Introduction

- The conceptual and operational framework of Ayurveda is wide enough to include all that is essential to make a man healthy and happy. The maintenance of positive health and the treatment of diseases are the two main objectives of Ayurveda. The observance of systematized daily routine i.e. dinacarya, life in accordance with the seasons rutucarya and well planned schedule of diet and exercise help one to maintain this.
- This system recognizes the role of mind in causation and cure of disease , so strict mental discipline and adherence to moral values are considered a prerequisite for health.

- The foresaid principles seems to be a hindrance in the modern life of materialism . A recent world health study reports that obesity is included among the top ten selected risk to health. Sedentary lifestyle and inclusion of increased intake of oily and fatty food in the daily diet result in this disorder
- Sthoulya is such a disease which provides a platform for so many hazards like hypertension , coronary heart disease , DM, OA, as well as psychological disorders like stress , anxiety depression etc. these indicate the weakening of various body systems which in turn affects the physiological equilibrium. Thus the mortality and morbidity are more in an obese person.

- *Sthoulya*- the word *sthoulya* is derived from the root *sthu* with suffix *ac* which stands probably for thick/ solid/ bulky.
- A person having heaviness and bulkiness of the body due to extensive growth especially in the abdominal region is termed as *sthula* and the state of *sthula* is called as *Sthoulya*.
- The word obesity is derived from latin word *ob* by reason of; and *edo*- eat which means having eaten, and the clinical state to describe this is called as obesity.

- Nidana –

1) Ahararatmaka

eg. Guru, snigdha ahara

2) Viharatmaka

eg avyayama, divaswapna

3) Mano nidana

eg. achinta, harsaniftyatvam

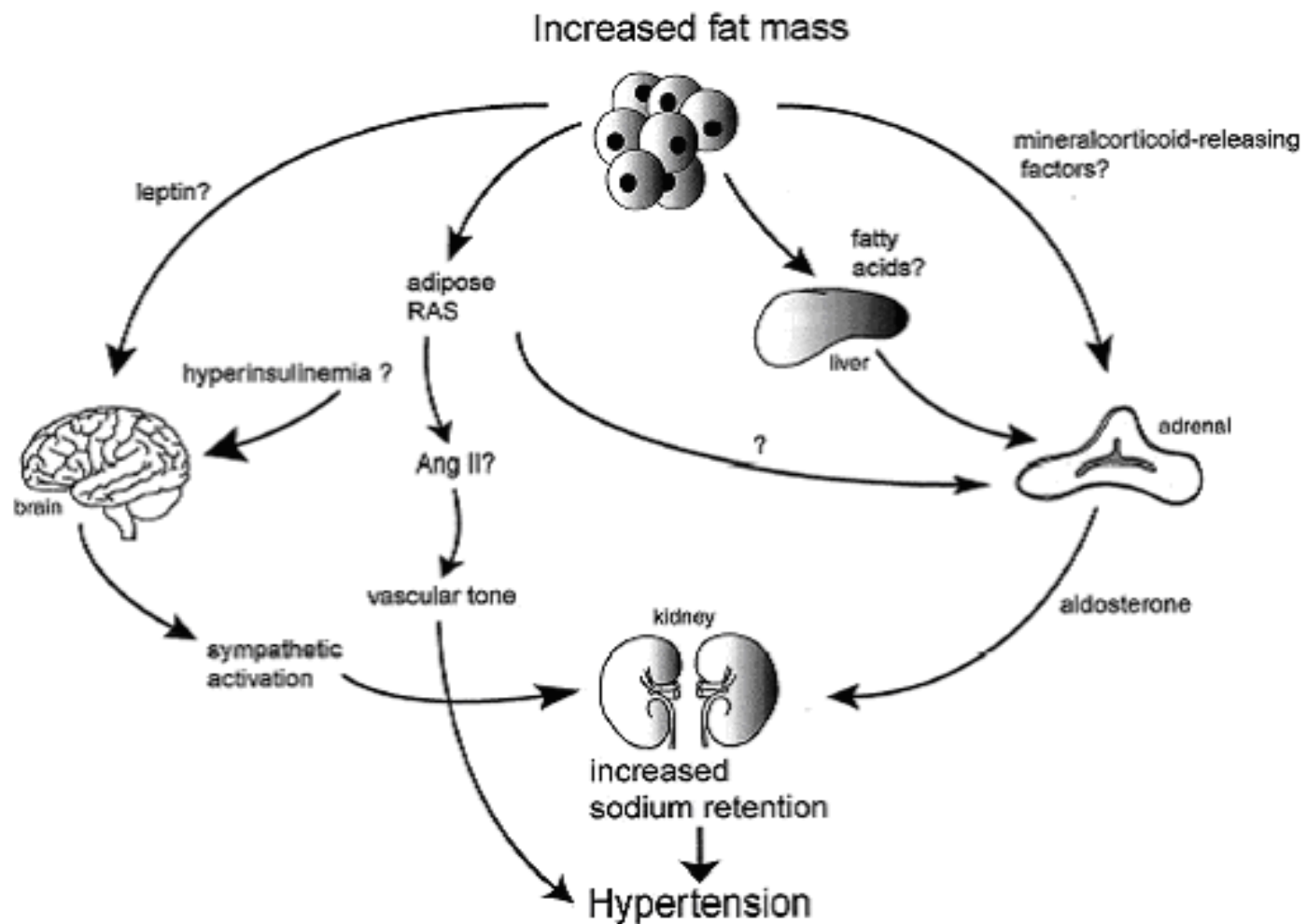
4) Anya nidana

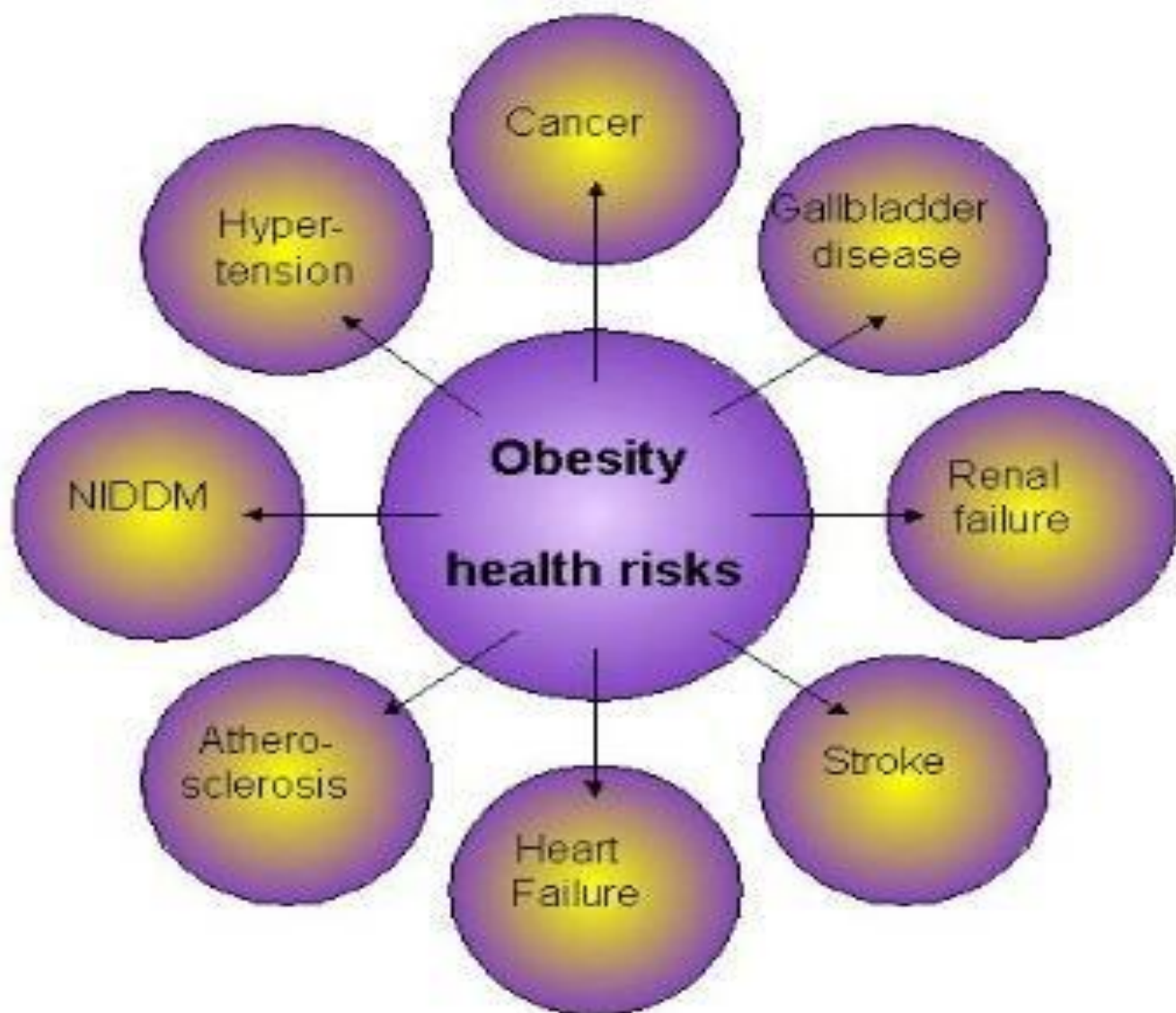
eg. Bijaswabhava

- Samprapti ghataka –
- Dosha –
 - Kapha- kledaka
 - Pitta - pachaka
 - Vata – samana, vyana
- Dushya – *rasa, meda*
- Agni – jathragni, dhatvagni
- Srotus – medovaha
- Srotoduhti – sanga
- Adhithana- sarvashareera
- Udbhavasthana – amashaya
- Rogamarga - bahya

Recent researches

- Recent studies have revealed the importance of human adipose tissue as a highly active endocrine organ. White adipose tissue produces and releases a wide variety of peptides and proteins, collectively referred to as adipokines, which may mediate the communication of adipose tissue with other organs, such as muscle, liver, pancreas, brain and heart. Recently identified mineralocorticoid-releasing factors (adipotensins) secreted by human adipocytes, supposedly implicated in the pathophysiology of obesity-mediated hypertension





Obesity health risks

- Obesity increases your risk of many other diseases and health problems, including the following:
- [Heart disease](#)
- [Diabetes](#)
- [High blood pressure](#)
- [Stroke](#)
- [Osteoarthritis](#) (especially knee, hip, and [lower back pain](#))
- [Gallstones](#)
- Lung disease and [sleep apnea](#)
- [Colon cancer](#)
- Endometrial [cancer](#)
- [Depression](#)
- [Gout](#)

Hypertension

- Blood pressure-it is the lateral pressure exerted by the blood on the vessel wall while flowing through it.
- Normal Blood pressure is regulated by 2 haemodynaemic forces
 - 1)Cardiac output
 - 2)Total peripheral vascular resistance.

If these two factors are altered it results to Hypertension.

The average systolic pressure is 110-120 mm of hg and diastolic pressure is 70-80 mm of hg.

- Essential Hypertension:-

1) primary

(nonspecific)

2) secondary

(organ specific)

• Category	systolic	diastolic
1) Normal	<130	<85
2) High normal	130-139	85-89
3) Hypertension stage I (mild)	140-159	90-99
4) Stage II (mod)	<160-179	<100-109
5) Stage III (severe)	180-209	110-119
6) Stage IV(v. severe)	>210	>120
7) Malignant HTN	>200	>140

Hypertension Symptoms

- People with high blood pressure have the following symptoms:
- [Headache](#)
- [Dizziness](#)
- Blurred vision
- [Nausea](#)
- Loss of energy / easy fatigue
- Insomnia
- vertigo

- Circulation – the references regarding circulation in the samhitas states

- अहरहर्गटलं तीथतो रसः ।

सु.सू.१२

- संतत्या भोज्यधातूनां परिवृत्तिस्तु चक्रवत् ।

च.चि.१५/२१

- स शब्दार्चिर्जलसन्तानवदणुना विशेषेणानुधावत्येव शरीरं केवलम् ।

सु.सू.१४/१६

- हृदोरसो निःसरति तत एव च सर्वशः।

- The fluid that circulates in the body is rasa because it is always going ie ever circulating. The rasa circulates round the body , like a rotating wheel. Sushruta states that the nutrient fluid comes into circulation comes from the heart, spreads all over the body and with a variable velocity , like the speed of light, sound and water. Bhela states that the nutrient fluid comes into circulation from the heart, spreads all over the body and returns to the heart through the siras. Therefore the heart is regarded as the centre of all siras or dhamanis.

- Samprapti ghataka-
- Dosha- kapha-
 - kapha -kledaka kapha
 - pitta - pacaka pitta
 - vata - vyana, samana
- Dushya- rasa, rakta
- Agni- jatharagni
- Srotus- rasa, rakta,
- Srotodushti – sanga,
- Adhithana- sarvashareera
- Udbhavasthana- amashaya
- Rogamarga - bahya

Ayurvedic perspective of HYPERTENSION

What is Hypertension? Is it -

1. Rakta gata vata
2. Sira vata
3. Pitta avruta vata
4. Kapha avruta vyana
5. Dhamani praticaya
6. Vyana bala vaishamya

- रक्तगत वात –
रुजस्तीव्राः सस्न्तापा वैवर्ण्यं कृशताऽरुचिः ।
गात्रे चारुषि भुक्तस्य स्तम्भस्वासृग्गतेनिले ॥

च.चि.२८/३१

the lakshanas are severe pain, burning sensation, discolouration, ematiation, distaste, boils, rigidity of the limbs after meals.

- सिरागत वात –
शरीरं मन्दरुकशोफ़ं शुष्यति स्पन्दते तथा ।
सुप्तास्तन्व्यो महत्यो वा सिरा वाते सिरागते ॥

च.चि.२८/३६

the lakshanas are slight pain in the body, edema, emaciation, increased pulsations, constriction or dilatation of veins.

- पित्तावृत वात –
- लिंगं पित्तावृते दाहस्तृष्णा शूलं भ्रमस्तमः ।
कटवम्ललवणोष्णैश्च विदाहः शीतकामिता ॥

च.चि.२८/६२

the lakshanas are burning sensation in the body, thirst, abdominal pain, vertigo, giddiness, etc

- रक्तावृत वात –
रक्तावृते सदाहार्तिस्त्वङ्.मांसान्तरजो भृशम् ।
भवेत सरागः श्वयथुर्जायन्ते मण्डलानि च ॥

च.चि.२८/६३

the lakshanas are burning sensation , edema with erythematous eruptions on the body.

- कफावृत व्यान –
गुरुता सर्वगात्राणां सर्वसन्ध्यस्थिजा रुजः ।
व्याने कफावृते लिङ्गं गतिसङ्.गस्तथाऽधिके ॥

च.चि.२८/२२८

the lakshanas are heaviness in the body ,pain in the joints , lowered or increased in the speed of circulation or movements.

- धमनी प्रतिचय–
धमनी प्रतिचयो धमन्युपलेपः । चक्रपाणि
deposition of kapha or medas in the internal layer of the vessels.

- Rakta gata vata perhaps nearer to essential hypertension, raktaavruta vata, siragata vata and kapha varuta vyana representing more advanced stage leading to hypertensive vascular diseases.

- The key complications of high blood pressure include heart disease, heart attack, [congestive heart failure](#), [stroke](#), [kidney failure](#), peripheral artery disease, and aortic aneurysms (outpouchings of the aorta). High blood pressure in adults is

Clinical study of Smritisagara rasa on Obesity induced Hypertension

- **Inclusion criteria-**
 - 1) Obese patient whose BMI was above 30 with no other systemic pathology
 - 2) Age above 30-60 yrs
- **Exclusion criteria –**
 - 1) Secondary and Malignant Hypertension
- **Source of Data –** SDM Hospital, Udupi

No of Pts.	Wt of Pts.	B.T	After 1/2 hr BP	After 1 hr BP	After 2 hr BP	After 3 hr BP	After 4 hr BP
1	75kg	140/90	130/90	130/90	130/90	138/90	140/90
2	90kg	180/100	170/96	160/94	160/90	160/90	160/90
3	84kg	150/86	140/80	140/80	140/80	146/80	146/80
4	90kg	200/180	190/180	180/170	170/160	170/160	180/170
5	95kg	150/100	130/90	130/90	130/90	138/90	140/90

रसं गन्धतालानां सशिलाताम्रभस्मनाम् ।
शुद्धानां मूर्छितानां च चूर्ण भाव्यं वचामृतैः ॥
एकविंशतिधा यश्चादब्राह्मीवारा तथैव च ।
कटभीबीजतैलेन भावयेदेकवारकम् ॥
स्मृतीसागरनामायं । यो.र.
गुणधर्म :-
रसोऽपस्मारनाशनः ।
सर्पिषा माषमात्रोऽयं भुक्तो हन्यादपस्मृतिम् ॥ यो.र.

Probable mode of action of the drug

- Contents of smritisagar rasa are
 1. Parada
 2. Ghandhaka
 3. Hartala
 4. Manashila
 5. Tamrabhasma

21 times fortication with vacha kashaya

21 times fortification with brahmi swarasa

1 time fortification with jyotishmati taila

- These drugs used are ushna tikshna vyavayi and yogavahi. The 5 drugs used are nirendriya and it has been fortified with saendriya drugs which enhances the qualities of the drug.
- Brahmi, vacha and jyotishmati all are sheeta virya, shamaka and vataghna
- It acts on the aajyavahi, sushumna, snayu and manas as a shamaka
- Dosha – vata , kapha
- Dushya – rasa ,rakta, and mamsa

- The results showed significant changes in the systolic as well as diastolic blood pressure. A difference of 20-30 mm of hg was noted in the study. But to conclude its effect on the body lasted only for 3-4 hrs and later again there was rise in the blood pressure.